

Ebenbichler GR, Resch KL, et al. Ultrasound treatment for treating the carpal tunnel syndrome: randomised “sham” controlled trial. BMJ 1998;316:731-5.

Design: Randomized Clinical Trial

Population/sample size:

- 45 adults (mean age 51) with bilateral idiopathic electrophysiologically defined CTS with symptoms 3 months or more treated at a PM&R clinic at the University of Vienna
- Exclusion if secondary neuropathy, systemic disease, axonal neuropathy of median n, past CTS rx with surgery, steroids, or ultrasound
- Both wrists treated in all patients; dominant wrist randomized to ultrasound or sham treatment, with opposite wrist receiving other treatment for 6 weeks (20 sessions), follow-up evaluation done at 2 weeks, end of rx, and 6 months

Primary outcome measures:

- Changes in visual analog score of subjective complaints, sensory loss, hand grip/pinch strength, motor distal latency, and sensory conduction velocity
- 11 of 45 subjects dropped out early, 8 for not keeping appointments, 3 for excessive pain requiring additional rx; 34 completed study
- Complaints in actively treated wrists (mean=3.3 on scale of 10) at baseline greater than in non-treated wrists (mean=2.0 on scale of 10)
- Patients, therapists, and investigators blinded
- Complete remission of symptoms was reported in 74% of US treated wrists and in only 20% of sham treated wrists at the end of 6 months
- Distal motor and sensory latency improved in ultrasound but not in sham wrists from baseline to end of treatment and 6 month f/u
- Hand grip strength improved in ultrasound over sham wrists at end of treatment and 6 mo; pinch strength showed advantage at 6 month f/u
- No side effects reported; 3 patients off work during rx; 8 took oral analgesics

Authors' conclusions:

- 20 sessions of ultrasound better than sham for mild to moderate CTS
- Ultrasound safer than repeated steroid injection

Comments:

- Inclusion criteria of “mild to moderate pain” for >3 months; not clear what “pain” means when numbness/paresthesias are classic chief complaints
- 8 patients dropped out due non-compliance with appointments; because both wrists were treated, this necessarily means equal attrition between US and sham treatments, but these 8 withdrawals may have been because US was not effective in the patients who were non-compliant with follow-up
- These withdrawals may mean that the reported results overstate the effectiveness of US for CTS

- Not all data clear—e.g., Table I shows 29 symptomatic wrists in active rx and 27 wrists in placebo, but sum of these is 56; 34 bilateral subjects should have 68 symptomatic wrists accounted for

Assessment: Adequate for an evidence statement that ultrasound may relieve CTS symptoms and improve function for 6 months